What is claimed is:

1. A method of manufacturing a semiconductor device, comprising the steps of:

forming an oxide film on a semiconductor substrate;

introducing nitrogen into the oxide film; and

thermally oxidizing the oxide film in a gas atmosphere containing oxygen;

wherein the temperature during said thermally oxidizing is higher than the temperature of any other processes performed later than said thermally oxidizing.

2. The method of manufacturing a semiconductor device according to claim 1,

wherein the nitrogen comprises activated nitrogen.

3. The method of manufacturing a semiconductor device according to claim 1,

wherein the atmosphere in said thermally oxidizing process contains at least one of O_2, O_3, activated oxygen, oxygen radicals and oxygen ions.

4. The method of manufacturing a semiconductor device according to claim 1,

wherein the partial pressure of oxygen is 0.075 to 250 Torr in said thermally oxidizing process.

5. The method of manufacturing a semiconductor device according to claim 1, further comprising oxy-nitriding process performing a thermal treatment process in an atmosphere contains at least oxygen and nitrogen after said thermally oxidizing process.

6. The method of manufacturing a semiconductor device according to claim 5,

wherein the thermally oxidizing process is performed in an atmosphere contains at least oxygen and nitrogen.

7. The method of manufacturing a semiconductor device according to claim 6,

wherein the gas containing oxygen and nitrogen is at least one gas of NO, N_2O, and NO_2.

8. The method of manufacturing a semiconductor device according to claim 1,

wherein at least a portion of dangling bonds on a surface of the semiconductor substrate that exists at the interface between the semiconductor substrate and the oxide film is terminated by nitrogen.

9. The method of manufacturing a semiconductor device according to claim 1,

wherein nitrogen is introduced in an interface

between the oxide film and the semiconductor substrate at 1E11 to 7E14 atoms/cm^2.

10. The method of manufacturing a semiconductor device according to claim 1,

wherein nitrogen is introduced in an interface between the oxide film and the semiconductor substrate at 7E12 atoms/cm^2.

11. The method of manufacturing a semiconductor device according to claim 1,

wherein the semiconductor substrate is not exposed to the ambient air during the step of introducing nitrogen and the thermally oxidizing process.

12. The method of manufacturing a semiconductor device according to claim 5,

wherein the semiconductor substrate is not exposed to the ambient air during the step of introducing nitrogen, the thermally oxidizing process, and the oxy-nitriding process.

13. A semiconductor device comprising:

a semiconductor substrate; and

an oxide film formed on the semiconductor substrate,

wherein at least a portion of dangling bonds on a surface of the semiconductor substrate that exist at an

interface between the semiconductor substrate and the oxide film is terminated by nitrogen.

14. The semiconductor device according to claim 13, further comprising:

a gate electrode formed on said oxide film;

wherein the concentration of nitrogen within the interface between the gate electrode and the oxide film is higher than the concentration of nitrogen within the oxide film.

15. The semiconductor device according to claim 13,

wherein the density of the nitrogen that terminates the dangling bonds on the surface of the semiconductor substrate is 1E11 to 7E14 atoms/cm^2.

16. The semiconductor device according to claim 14,

wherein the density of the nitrogen that terminates the dangling bonds on the surface of the semiconductor substrate is 1E11 to 7E14 atoms/cm^2.

17. The semiconductor device according to claim 15,

wherein the density of the nitrogen that terminates the dangling bonds on the surface of the semiconductor substrate is 7E12 atoms/cm^2.

18. The semiconductor device according to claim 16,

wherein the density of the nitrogen that terminates the dangling bonds on the surface of the semiconductor substrate is 7E12 atoms/cm^2.